

# SEQUENCE LISTING

<110> Lehar, Sophie  
Manning, Stephen  
Coyle, Anthony J.  
Gutierrez-Ramos, Jose-Carlos

<120> Novel Th2-Specific Molecules and Uses Thereof

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<151> 1998-10-07

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<151> 1999-02-26

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|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |  |  |
| Cys | Lys | Val | Arg | Leu | Leu | Asp | Gly | Gly | Asp | Phe | Val | Ser | Leu | Ser | Ser |  |  |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |  |  |
| Arg | Glu | Glu | Val | Gln | Glu | Asn | Cys | Val | Arg | Trp | Arg | Lys | Arg | Phe | Thr |  |  |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |  |  |
| Phe | Val | Cys | Lys | Met | Ser | Ala | Asn | Pro | Ala | Thr | Gly | Leu | Leu | Asp | Pro |  |  |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |  |  |
| Cys | Ile | Phe | Arg | Val | Ser | Val | Arg | Lys | Glu | Leu | Lys | Gly | Gly | Lys | Ala |  |  |  |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |  |  |
| Tyr | Ser | Lys | Leu | Gly | Phe | Thr | Asp | Leu | Asn | Leu | Ala | Glu | Phe | Ala | Gly |  |  |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |  |  |
| Ser | Gly | Ser | Thr | Val | Arg | Cys | Cys | Leu | Leu | Glu | Gly | Tyr | Asp | Thr | Lys |  |  |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |  |  |
| Asn | Thr | Arg | Gln | Asp | Asn | Ser | Ile | Leu | Lys | Val | Thr | Ile | Gly | Met | Phe |  |  |  |  |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |  |  |
| Leu | Leu | Ser | Gly | Asp | Pro | Cys | Phe | Lys | Thr | Pro | Pro | Ser | Thr | Ala | Lys |  |  |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |  |  |
| Ser | Ile | Ser | Ile | Pro | Gly | Gln | Asp | Ser | Ser | Leu | Gln | Leu | Thr | Cys | Lys |  |  |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |  |  |  |  |
| Gly | Gly | Gly | Thr | Ser | Ser | Gly | Gly | Ser | Ser | Ser | Thr | Asn | Ser | Leu | Thr |  |  |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |  |  |
| Gly | Ser | Arg | Pro | Pro | Lys | Thr | Arg | Pro | Thr | Ile | Leu | Gly | Ser | Gly | Leu |  |  |  |  |
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|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |  |  |
| Ser | Gly | His | Ser | Arg | Asn | Ser | Ser | Tyr | Ala | Ser | Gln | Gln | Ser | Lys | Leu |  |  |  |  |
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| Ser | Met | Ala | Val | Glu | Gly | Pro | Glu | Gly | Met | Glu | Arg | Glu | His | Arg | Pro |  |  |  |  |
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| Ser | Glu | Lys | Pro | Pro | Arg | Pro | Pro | Glu | Lys | Pro | Pro | Arg | Pro | Pro | Arg |  |  |  |  |



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| Glu Phe Gln Gln Arg Phe Asp Gly Ile Leu Thr Glu Gly Glu Gly Pro |     |
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| cga agg ctg agg aac ttg tac ttc ctg tac ctg ata gag tta agg gct | 965 |



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| 215 220 225 230   |     |
| aac tgg cta gaa ggc ctc tgt gta gaa aag aga gca ttc tac aga ctt | 773 |
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| 235 240 245   |     |
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| Phe Phe Ala Gly Asp Lys Asn Glu Ala His Lys Leu Lys Glu Asp Phe |     |
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Arg Asp Cys Ala Val Lys Pro Cys His Ser Asp Glu Val Pro Asp Gly  
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Ile Lys Ser Ala Ser Tyr Lys Tyr Ser Glu Glu Ala Asn Arg Ile Glu  
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
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|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| His | Leu | Ser | Ala | Arg | Tyr | Leu | Leu | Gln | Asp | Thr | Trp | Leu | Glu | Lys | Lys |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Trp | Gly | His | Asn | Val | Thr | Glu | Phe | Gln | Gln | Arg | Phe | Asp | Gly | Ile | Leu |
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| Thr | Glu | Gly | Glu | Gly | Pro | Arg | Arg | Leu | Arg | Asn | Leu | Tyr | Phe | Leu | Tyr |
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| Leu | Ile | Glu | Leu | Arg | Ala | Leu | Ser | Lys | Val | Leu | Pro | Phe | Phe | Glu | Arg |
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| Pro | Asp | Phe | Gln | Leu | Phe | Thr | Gly | Asn | Lys | Val | Gln | Asp | Ala | Glu | Asn |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Lys | Ala | Leu | Leu | Leu | Glu | Ile | Leu | His | Glu | Ile | Lys | Ser | Phe | Pro | Leu |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| His | Phe | Asp | Glu | Asn | Ser | Phe | Phe | Ala | Gly | Asp | Lys | Asn | Glu | Ala | His |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Lys | Leu | Lys | Glu | Asp | Phe | Arg | Leu | His | Phe | Arg | Asn | Ile | Ser | Arg | Ile |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Met | Asp | Cys | Val | Gly | Cys | Phe | Lys | Cys | Arg | Leu | Trp | Gly | Lys | Leu | Gln |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Gln | Gly | Leu | Gly | Thr | Ala | Leu | Lys | Ile | Leu | Phe | Ser | Glu | Lys | Leu |
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| Leu Ile Ile Trp Phe Ser Lys Lys Lys Tyr Gly Ser Ser Val His Asp |                         |                     |     |
| 165   | 170                     | 175                 |     |
| Pro Asn Ser Glu Tyr Met Phe Met Ala Ala Val Asn Thr Asn Lys Lys |                         |                     |     |
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| Ile Asn Gly Ser Ala Asp His Arg Met Phe Ser Phe His Asn Gly Gly |     |
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| gta cag att tct tgt aaa tac cct gag act gtc cag cag tta aaa atg | 198 |
| Val Gln Ile Ser Cys Lys Tyr Pro Glu Thr Val Gln Gln Leu Lys Met |     |
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| Arg Leu Phe Arg Glu Arg Glu Val Leu Cys Glu Leu Thr Lys Thr Lys |     |
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| His         | Leu | Ser | Asn         | Asn        | Ser       | Val        | Ser | Phe        | Phe         | Leu       | Asn | Asn         | Pro | Asp | Ser        |     |     |
|             |     |     |             | 90         |           |            |     |            | 95          |           |     |             |     | 100 |            |     |     |
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| Ser         | Gln | Gly | Ser         | Tyr        | Tyr       | Phe        | Cys | Ser        | Leu         | Ser       | Ile | Phe         | Asp | Pro | Pro        |     |     |
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| cct         | ttt | caa | gaa         | agg        | aac       | ctt        | agt | gga        | gga         | tat       | ttg | cat         | att | tat | gaa        | 438 |     |
| Pro         | Phe | Gln | Glu         | Arg        | Asn       | Leu        | Ser | Gly        | Gly         | Tyr       | Leu | His         | Ile | Tyr | Glu        |     |     |
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| tcc         | cag | ctc | tgc         | tgc        | cag       | ctg        | aag | ctc        | tgg         | cta       | ccc | gta         | ggg | tgt | gca        | 486 |     |
| Ser         | Gln | Leu | Cys         | Cys        | Gln       | Leu        | Lys | Leu        | Trp         | Leu       | Pro | Val         | Gly | Cys | Ala        |     |     |
|             | 135 |     |             |            |           | 140        |     |            |             |           | 145 |             |     |     |            |     |     |
| gct         | ttc | gtt | gtg         | gta        | ctc       | ctt        | ttt | gga        | tgc         | ata       | ctt | atc         | atc | tgg | ttt        | 534 |     |
| Ala         | Phe | Val | Val         | Val        |           | Leu        | Phe | Gly        | Cys         | Ile       | Leu | Ile         | Ile | Trp | Phe        |     |     |
| 150         |     |     |             |            | 155       |            |     |            |             | 160       |     |             |     |     | 165        |     |     |
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| Ser         | Lys | Lys | Lys         | Tyr        | Gly       | Ser        | Ser | Val        | His         | Asp       | Pro | Asn         | Ser | Glu | Tyr        |     |     |
|             |     |     |             | 170        |           |            |     |            | 175         |           |     |             |     | 180 |            |     |     |
| atg         | ttc | atg | gcg         | gca        | gtc       | aac        | aca | aac        | aaa         | aag       | tct | aga         | ctt | gca | ggt        | 630 |     |
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|             |     |     | 185         |            |           |            |     | 190        |             |           |     |             | 195 |     |            |     |     |
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| Val         | Thr | Ser |             | 200        |           |            |     |            |             |           |     | catggactag  |     |     |            |     |     |
|             |     |     |             |            |           |            |     |            |             |           |     |             |     |     |            |     |     |
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| tctctccgtg  |     |     | cctgattcta  |            |           | gctatgcact |     |            | ggccaggaaa  |           |     | acaaacatat  |     |     | ctccagcatt |     | 982 |
| tttttataaaa |     |     | aaatgccaaag |            |           | ggtatgaatc |     |            | tgtaaagcac  |           |     | acaggcagcc  |     |     |            |     |     |

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 35 40 45  
 Gln Gln Leu Lys Met Arg Leu Phe Arg Glu Arg Glu Val Leu Cys Glu  
 50 55 60  
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 65 70 75 80  
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 Asn Asn Pro Asp Ser Ser Gln Gly Ser Tyr Tyr Phe Cys Ser Leu Ser  
 100 105 110  
 Ile Phe Asp Pro Pro Pro Phe Gln Glu Arg Asn Leu Ser Gly Gly Tyr  
 115 120 125  
 Leu His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Leu Trp Leu  
 130 135 140  
 Pro Val Gly Cys Ala Ala Phe Val Val Val Leu Leu Phe Gly Cys Ile  
 145 150 155 160  
 Leu Ile Ile Trp Phe Ser Lys Lys Lys Tyr Gly Ser Ser Val His Asp  
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caa ttt aaa atg cag ttg ctg aaa ggg ggg caa ata ctc tgc gat ctc 309
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Thr Lys Thr Lys Gly Ser Gly Asn Thr Val Ser Ile Lys Ser Leu Lys
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Gly Cys Ala Ala Phe Val Val Val Cys Ile Leu Gly Cys Ile Leu Ile
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Cys Trp Leu Thr Lys Lys Tyr Ser Ser Ser Val His Asp Pro Asn Gly
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|   |         |
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 Thr Asp Val Thr Leu  
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Phe His Asn Gly Gly Val Gln Ile Leu Cys Lys Tyr Pro Asp Ile Val
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Gln Gln Phe Lys Met Gln Leu Leu Lys Gly Gly Gln Ile Leu Cys Asp
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Leu Thr Lys Thr Lys Gly Ser Gly Asn Thr Val Ser Ile Lys Ser Leu
 65          70          75          80

Lys Phe Cys His Ser Gln Leu Ser Asn Asn Ser Val Ser Phe Phe Leu
      85          90          95

Tyr Asn Leu Asp His Ser His Ala Asn Tyr Tyr Phe Cys Asn Leu Ser
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Ile Phe Asp Pro Pro Pro Phe Lys Val Thr Leu Thr Gly Gly Tyr Leu
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His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Phe Trp Leu Pro
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Ile Cys Trp Leu Thr Lys Lys Tyr Ser Ser Ser Val His Asp Pro Asn
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| ggc<br>Gly        | cgc<br>Arg        | ggc<br>Gly        | tgg<br>Trp<br>5   | gga<br>Gly        | ttc<br>Phe        | ttg<br>Leu        | ttt<br>Phe        | ggc<br>Gly<br>10 | ctc<br>Leu        | ctg<br>Leu        | ggc<br>Gly        | gcc<br>Ala        | gtg<br>Val<br>15 | tgg<br>Trp        | ctg<br>Leu        | 107 |
| ctc<br>Leu        | agc<br>Ser        | tcg<br>Ser<br>20  | ggc<br>Gly        | cac<br>His        | gga<br>Gly        | gag<br>Glu        | gag<br>Glu        | cag<br>Gln       | ccc<br>Pro        | ccg<br>Pro        | gag<br>Glu        | aca<br>Thr<br>30  | gcg<br>Ala       | gca<br>Ala        | cag<br>Gln        | 155 |
| agg<br>Arg        | tgc<br>Cys<br>35  | ttc<br>Phe        | tgc<br>Cys        | cag<br>Gln        | gtt<br>Val        | agt<br>Ser<br>40  | ggt<br>Gly        | tac<br>Tyr       | ttg<br>Leu        | gat<br>Asp        | gat<br>Asp<br>45  | tgt<br>Cys        | acc<br>Thr       | tgt<br>Cys        | gat<br>Asp        | 203 |
| gtt<br>Val<br>50  | gaa<br>Glu        | acc<br>Thr        | att<br>Ile        | gat<br>Asp        | aga<br>Arg<br>55  | ttt<br>Phe        | aat<br>Asn        | aac<br>Asn       | tac<br>Tyr        | agg<br>Arg<br>60  | ctt<br>Leu        | ttc<br>Phe        | cca<br>Pro       | aga<br>Arg        | cta<br>Leu<br>65  | 251 |
| caa<br>Gln        | aaa<br>Lys        | ctt<br>Leu        | ctt<br>Leu        | gaa<br>Glu<br>70  | agt<br>Ser        | gac<br>Asp        | tac<br>Tyr        | ttt<br>Phe<br>75 | agg<br>Arg        | tat<br>Tyr        | tac<br>Tyr        | aag<br>Lys        | gta<br>Val       | aac<br>Asn<br>80  | ctg<br>Leu        | 299 |
| aag<br>Lys        | agg<br>Arg        | ccg<br>Pro        | tgt<br>Cys<br>85  | cct<br>Pro        | ttc<br>Phe        | tgg<br>Trp        | aat<br>Asn        | gac<br>Asp<br>90 | atc<br>Ile        | agc<br>Ser        | cag<br>Gln        | tgt<br>Cys        | gga<br>Gly<br>95 | aga<br>Arg        | agg<br>Arg        | 347 |
| gac<br>Asp        | tgt<br>Cys        | gct<br>Ala<br>100 | gtc<br>Val        | aaa<br>Lys        | cca<br>Pro        | tgt<br>Cys        | caa<br>Gln<br>105 | tct<br>Ser       | gat<br>Asp        | gaa<br>Glu        | gtt<br>Val        | cct<br>Pro<br>110 | gat<br>Asp       | gga<br>Gly        | att<br>Ile        | 395 |
| aaa<br>Lys        | tct<br>Ser<br>115 | gcg<br>Ala        | agc<br>Ser        | tac<br>Tyr        | aag<br>Lys        | tat<br>Tyr<br>120 | tct<br>Ser        | gaa<br>Glu       | gaa<br>Glu        | gcc<br>Ala        | aat<br>Asn<br>125 | aat<br>Asn        | ctc<br>Leu       | att<br>Ile        | gaa<br>Glu        | 443 |
| gaa<br>Glu<br>130 | tgt<br>Cys        | gaa<br>Glu        | caa<br>Gln        | gct<br>Ala        | gaa<br>Glu<br>135 | cga<br>Arg        | ctt<br>Leu        | gga<br>Gly       | gca<br>Ala        | gtg<br>Val<br>140 | gat<br>Asp        | gaa<br>Glu        | tct<br>Ser       | ctg<br>Leu        | agt<br>Ser<br>145 | 491 |
| gag<br>Glu        | gaa<br>Glu        | aca<br>Thr        | cag<br>Gln        | aag<br>Lys<br>150 | gct<br>Ala        | gtt<br>Val        | ctt<br>Leu        | cag<br>Gln       | tgg<br>Trp<br>155 | acc<br>Thr        | aag<br>Lys        | cat<br>His        | gat<br>Asp       | gat<br>Asp<br>160 | tct<br>Ser        | 539 |
| tca<br>Ser        | gat<br>Asp        | aac<br>Asn        | ttc<br>Phe<br>165 | tgt<br>Cys        | gaa<br>Glu        | gct<br>Ala        | gat<br>Asp<br>170 | gat<br>Asp       | tgg<br>Trp        | atc<br>Ile        | tgc<br>Cys        | tgg<br>Trp<br>175 | tgg<br>Trp       | tca<br>Ser        | tct<br>Ser        | 587 |
| aag<br>Lys        | aag<br>Lys        | aaa<br>Lys<br>180 | gta<br>Val        | ttt<br>Phe        | gac<br>Asp        | att<br>Ile        | cag<br>Gln<br>185 | tcc<br>Ser       | cct<br>Pro        | gaa<br>Glu        | gct<br>Ala        | gaa<br>Glu<br>190 | tat<br>Tyr       | gta<br>Val        | gat<br>Asp        | 635 |
| ttg<br>Leu        | ctt<br>Leu<br>195 | ctt<br>Leu        | aat<br>Asn        | cct<br>Pro        | gag<br>Glu        | cgc<br>Arg<br>200 | tac<br>Tyr        | act<br>Thr       | ggt<br>Gly        | tac<br>Tyr        | aag<br>Lys<br>205 | gga<br>Gly        | cca<br>Pro       | gat<br>Asp        | gct<br>Ala        | 683 |
| tgg               | aaa               | ata               | tgg               | aat               | gtc               | atc               | tac               | gaa              | gaa               | aac               | tgt               | ttt               | aag              | cca               | cag               | 731 |

|  |     |
|--|-----|
| Trp Lys Ile Trp Asn Val Ile Tyr Glu Glu Asn Cys Phe Lys Pro Gln      |     |
| 210 215 220 225  |     |
| aca att aaa aga cct tta aat cct ttg gct tct ggt caa ggg aca agt      | 779 |
| Thr Ile Lys Arg Pro Leu Asn Pro Leu Ala Ser Gly Gln Gly Thr Ser      |     |
| 230 235 240  |     |
| gaa gag aac act ttt tac agt tgg cta gaa ggt ctc tgt gta gaa aaa      | 827 |
| Glu Glu Asn Thr Phe Tyr Ser Trp Leu Glu Gly Leu Cys Val Glu Lys      |     |
| 245 250 255  |     |
| aga gca ttc tac aga ctt ata tct ggc cta cat gca agc att aat gtg      | 875 |
| Arg Ala Phe Tyr Arg Leu Ile Ser Gly Leu His Ala Ser Ile Asn Val      |     |
| 260 265 270  |     |
| cat ttg agt gca aga tat ctt tta caa gag acc tgg tta gaa aag aaa      | 923 |
| His Leu Ser Ala Arg Tyr Leu Leu Gln Glu Thr Trp Leu Glu Lys Lys      |     |
| 275 280 285  |     |
| tgg gga cac aac att aca gaa ttt caa cag cga ttt gat gga att ttg      | 971 |
| Trp Gly His Asn Ile Thr Glu Phe Gln Gln Arg Phe Asp Gly Ile Leu      |     |
| 290 295 300 305  |     |
| act gaa gga gaa ggt cca aga agg ctt aag aac ttg tat ttt ctc tac      |     |
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| 1067 Leu Ile Glu Leu Arg Ala Leu Ser Lys Val Leu Pro Phe Phe Glu Arg |     |
| 325 330 335  |     |
| cca gat ttt caa ctc ttt act gga aat aaa att cag gat gag gaa aac      |     |
| 1115 Pro Asp Phe Gln Leu Phe Thr Gly Asn Lys Ile Gln Asp Glu Glu Asn |     |
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| 1163 Lys Met Leu Leu Leu Glu Ile Leu His Glu Ile Lys Ser Phe Pro Leu |     |
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| cat ttt gat gag aat tca ttt ttt gct ggg gat aaa aaa gaa gca cac      |     |
| 1211 His Phe Asp Glu Asn Ser Phe Phe Ala Gly Asp Lys Lys Glu Ala His |     |
| 370 375 380 385  |     |
| aaa cta aag gag gac ttt cga ctg cat ttt aga aat att tca aga att      |     |
| 1259 Lys Leu Lys Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile |     |
| 390 395 400  |     |



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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Leu | Leu | Ser | Ser | Gly | His | Gly | Glu | Glu | Gln | Pro | Pro | Glu | Thr | Ala | Ala |  |  |
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| Gln | Arg | Cys | Phe | Cys | Gln | Val | Ser | Gly | Tyr | Leu | Asp | Asp | Cys | Thr | Cys |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |
| Asp | Val | Glu | Thr | Ile | Asp | Arg | Phe | Asn | Asn | Tyr | Arg | Leu | Phe | Pro | Arg |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |
| Leu | Gln | Lys | Leu | Leu | Glu | Ser | Asp | Tyr | Phe | Arg | Tyr | Tyr | Lys | Val | Asn |  |  |
|     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |
| Leu | Lys | Arg | Pro | Cys | Pro | Phe | Trp | Asn | Asp | Ile | Ser | Gln | Cys | Gly | Arg |  |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |
| Arg | Asp | Cys | Ala | Val | Lys | Pro | Cys | Gln | Ser | Asp | Glu | Val | Pro | Asp | Gly |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Ile | Lys | Ser | Ala | Ser | Tyr | Lys | Tyr | Ser | Glu | Glu | Ala | Asn | Asn | Leu | Ile |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |  |  |
| Glu | Glu | Cys | Glu | Gln | Ala | Glu | Arg | Leu | Gly | Ala | Val | Asp | Glu | Ser | Leu |  |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |
| Ser | Glu | Glu | Thr | Gln | Lys | Ala | Val | Leu | Gln | Trp | Thr | Lys | His | Asp | Asp |  |  |
|     | 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |  |  |
| Ser | Ser | Asp | Asn | Phe | Cys | Glu | Ala | Asp | Asp | Trp | Ile | Cys | Trp | Trp | Ser |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |  |  |
| Ser | Lys | Lys | Lys | Val | Phe | Asp | Ile | Gln | Ser | Pro | Glu | Ala | Glu | Tyr | Val |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |
| Asp | Leu | Leu | Leu | Asn | Pro | Glu | Arg | Tyr | Thr | Gly | Tyr | Lys | Gly | Pro | Asp |  |  |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |  |
| Ala | Trp | Lys | Ile | Trp | Asn | Val | Ile | Tyr | Glu | Glu | Asn | Cys | Phe | Lys | Pro |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| Gln | Thr | Ile | Lys | Arg | Pro | Leu | Asn | Pro | Leu | Ala | Ser | Gly | Gln | Gly | Thr |  |  |
|     | 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Ser | Glu | Glu | Asn | Thr | Phe | Tyr | Ser | Trp | Leu | Glu | Gly | Leu | Cys | Val | Glu |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |
| Lys | Arg | Ala | Phe | Tyr | Arg | Leu | Ile | Ser | Gly | Leu | His | Ala | Ser | Ile | Asn |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |
| Val | His | Leu | Ser | Ala | Arg | Tyr | Leu | Leu | Gln | Glu | Thr | Trp | Leu | Glu | Lys |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |
| Lys | Trp | Gly | His | Asn | Ile | Thr | Glu | Phe | Gln | Gln | Arg | Phe | Asp | Gly | Ile |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |

Leu Thr Glu Gly Glu Gly Pro Arg Arg Leu Lys Asn Leu Tyr Phe Leu  
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Arg Pro Asp Phe Gln Leu Phe Thr Gly Asn Lys Ile Gln Asp Glu Glu  
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Asn Lys Met Leu Leu Leu Glu Ile Leu His Glu Ile Lys Ser Phe Pro  
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Leu His Phe Asp Glu Asn Ser Phe Phe Ala Gly Asp Lys Lys Glu Ala  
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His Lys Leu Lys Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg  
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Ile Met Asp Cys Val Gly Cys Phe Lys Cys Arg Leu Trp Gly Lys Leu  
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Gln Thr Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys  
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Leu Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu Phe His Leu  
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Thr Arg Gln Glu Ile Val Ser Leu Phe Asn Ala Phe Gly Arg Ile Ser  
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Ala Thr Gly Leu Leu Asp Pro Cys Val Phe Arg Val Ser Val Arg Lys
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| Met | Ala | Phe | Leu | Met | Lys | Lys | Lys | Lys | Phe | Lys | Phe | Gln | Thr | Thr | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Leu | Glu | Glu | Leu | Thr | Ala | Val | Pro | Phe | Val | Asn | Gly | Val | Leu | Phe |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Cys | Lys | Val | Arg | Leu | Leu | Asp | Gly | Gly | Asp | Phe | Val | Ser | Leu | Ser | Ser |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Glu | Glu | Val | Gln | Glu | Asn | Cys | Val | Arg | Trp | Arg | Lys | Arg | Phe | Thr |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Phe | Val | Cys | Lys | Met | Ser | Ala | Asn | Pro | Ala | Thr | Gly | Leu | Leu | Asp | Pro |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Cys | Val | Phe | Arg | Val | Ser | Val | Arg | Lys | Glu | Leu | Lys | Gly | Gly | Lys | Ala |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Tyr | Ser | Lys | Leu | Gly | Phe | Ala | Asp | Leu | Asn | Leu | Ala | Glu | Phe | Ala | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ser | Gly | Ser | Thr | Val | Arg | Cys | Cys | Leu | Leu | Glu | Gly | Tyr | Asp | Thr | Lys |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Asn | Thr | Arg | Gln | Asp | Asn | Ser | Ile | Leu | Lys | Val | Thr | Ile | Gly | Met | Phe |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Leu | Leu | Ser | Gly | Asp | Pro | Cys | Phe | Lys | Thr | Pro | Pro | Ser | Thr | Ala | Lys |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |



Ser Ile Ser Ile Pro Gly Gln Asp Ser Ser Leu Gln Leu Thr Cys Lys  
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Gly Gly Gly Thr Ser Ser Gly Gly Ser Ser Thr Asn Ser Leu Thr Gly  
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Ser Arg Pro Pro Lys Ala Arg Pro Thr Ile Leu Ser Ser Gly Leu Pro  
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Gly His Ser Arg Asn Ser Ser Tyr Ala Ser Gln Gln Ser Lys Ile Ser  
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Gly Tyr Ser Thr Glu His Ser Arg Ser Ser Ser Leu Ser Asp Leu Thr  
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His Arg Arg Asn Thr Ser Thr Ser Ser Ser Ala Ser Gly Gly Leu Gly  
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Met Thr Val Glu Gly Pro Glu Gly Ser Glu Arg Glu His Arg Pro Pro  
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Glu Lys Pro Pro Arg Pro Pro Arg Pro Leu His Leu Ser Asp Arg Ser  
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Phe Arg Arg Lys Lys Asp Ser Val Glu Ser His Pro Thr Trp Val Asp  
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Asp Thr Arg Ile Asp Ala Asp Ala Ile Val Glu Lys Ile Val Gln Ser  
325 330 335

Gln Asp Phe Thr Asp Gly Ser Asn Thr Glu Asp Ser Asn Leu Arg Leu  
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Phe Val Ser Arg Asp Gly Ser Ala Thr Leu Ser Gly Ile Gln Leu Ala  
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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|
|     |     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     |     | 30 |  |  |  |
| Gly | Met | Tyr | Ile | Ser | Ala | Asn | Asn | Ser | Gly | Ala | Gly | Ser | Tyr | Val | Arg |    |  |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |    |  |  |  |
| Thr | Lys | Lys | Gly | Asn | Ala | Leu | Lys | Glu | Gly | Phe | Cys | Ser | Leu | Thr | Met |    |  |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |    |  |  |  |
| Asp | Glu | Val | Ser | Gln | Asn | Thr | Glu | Gly | Ile | Thr | Gly | Leu | Leu | Asn | Asn |    |  |  |  |
|     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |    |  |  |  |
| Ile | Thr | Ser | His | Pro | Tyr | Phe | Arg | Tyr | Phe | Lys | Val | Asn | Leu | Asp | Arg |    |  |  |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |    |  |  |  |
| Glu | Cys | Arg | Tyr | Trp | Val | Ala | Glu | Ala | Ser | Cys | Thr | Cys | Asp | Ser | Asn |    |  |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |    |  |  |  |
| Gly | Cys | Gln | Ile | Cys | Thr | Cys | Asp | Asp | Ser | Gly | Ile | Pro | Glu | Thr | Leu |    |  |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |    |  |  |  |
| Lys | Tyr | Pro | Tyr | Asp | Met | Ser | Asp | Val | Ser | Ala | Val | Glu | Arg | Arg | Thr |    |  |  |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |    |  |  |  |
| Ala | Pro | Asp | Lys | His | Ala | Ala | Lys | Gly | Phe | Glu | Asp | Glu | Ile | Lys | Pro |    |  |  |  |
|     | 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |    |  |  |  |
| Ile | Asp | Pro | Asp | Arg | Asp | Ala | Thr | Tyr | Val | Asp | Leu | Leu | Gln | Asn | Pro |    |  |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |    |  |  |  |
| Glu | Ala | Asn | Thr | Gly | Tyr | Ser | Gly | Pro | Lys | Ala | Ala | Arg | Val | Trp | Gln |    |  |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |    |  |  |  |
| Ala | Val | Tyr | Asp | Asn | Cys | Asn | Ile | Asp | Gly | Leu | Pro | Ser | Asn | Asp | Thr |    |  |  |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |    |  |  |  |
| Ala | Gly | Val | Glu | Asn | Arg | Glu | Lys | Ala | Leu | Leu | Arg | Gln | Leu | Leu | Ser |    |  |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |    |  |  |  |
| Gly | Leu | His | Thr | Ser | Ile | Thr | Met | His | Val | Ala | Ala | Phe | Phe | Tyr | Asn |    |  |  |  |
|     | 225 |     |     |     | 230 |     |     |     | 235 |     |     |     |     |     | 240 |    |  |  |  |
| Asp | Thr | Lys | Gly | Asp | Ser | Pro | Leu | Arg | Ser | Leu | Gly | Val | Leu | Asn | Asn |    |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |    |  |  |  |
| Pro | Asn | Ile | Ser | Phe | Tyr | Pro | Asn | Cys | Gly | Met | Phe | Arg | Arg | Ile | Val |    |  |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |    |  |  |  |
| Lys | Asn | Asp | Glu | Phe | Ile | Arg | Asn | Leu | Phe | Val | Val | Tyr | Gln | Phe | Val |    |  |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |    |  |  |  |
| Leu | Arg | Ala | Val | Ala | Lys | Thr | Lys | Arg | Ala | Phe | Leu | Ala | Asn | Ser | Ser |    |  |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |    |  |  |  |
| Leu | Tyr | Asn | Ser | Gly | Phe | Asn | Gly | Ala | Ala | Thr | Asp | Gly | Asp | Val | Arg |    |  |  |  |

|               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|-----|
| 305           |     |     |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     |  |  | 320 |
| Leu           | Tyr | Ser | Asn | Ile | Gly | Glu | Leu | Phe | Ser | Ser | Lys | Leu | Phe | Arg | Val |  |  |     |
|               |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |     |
| Ala           | Thr | Phe | Asp | Glu | Gln | Lys | Phe | Phe | Glu | Ser | Pro | Gly | Ala | His | Leu |  |  |     |
|               |     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |  |  |     |
| Leu           | Val | Arg | Gln | Met | Lys | Arg | Val | Val | His | Asn | Val | Thr | Thr | Leu | Met |  |  |     |
|               |     |     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |  |  |     |
| Asp           | Cys | Val | Thr | Cys | Glu | Lys | Cys | Arg | Ala | Trp | Gly | Lys | Leu | Glu | Thr |  |  |     |
|               |     |     |     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |  |  |     |
| Ala           | Ala | Leu | Ala | Thr | Ala | Leu | Lys | Ile | Val | Phe | Gly | Ser | Ala | Glu | Asn |  |  |     |
|               |     |     |     | 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |  |  |     |
| Val           | Val | Glu | Leu | Asn | Arg | Gly | Glu | Arg | Val | Ala | Leu | Ile | Asn | Phe | Ala |  |  |     |
|               |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |     |
| Arg           | Gln | Leu | Ala | Ile | Ser | Val | Lys | Asn | Val | Arg | Ser | Leu | Ala | Ala | Val |  |  |     |
|               |     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |  |  |     |
| Cys           | Glu | Lys | Phe | Asn | Tyr | Thr | Ala | Met | Ser |     |     |     |     |     |     |  |  |     |
|               |     |     |     | 435 |     |     |     |     | 440 |     |     |     |     |     |     |  |  |     |
| <210> 18      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |
| <211> 218     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |
| <212> PRT     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |
| <213> Mus sp. |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |
| <400> 18      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |
| Met           | Thr | Leu | Arg | Leu | Leu | Phe | Leu | Ala | Leu | Asn | Phe | Phe | Ser | Val | Gln |  |  |     |
| 1             |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |  |  |     |
| Val           | Thr | Glu | Asn | Lys | Ile | Leu | Val | Lys | Gln | Ser | Pro | Leu | Leu | Val | Val |  |  |     |
|               |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |  |  |     |
| Asp           | Ser | Asn | Glu | Val | Ser | Leu | Ser | Cys | Arg | Tyr | Ser | Tyr | Asn | Leu | Leu |  |  |     |
|               |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |  |  |     |
| Ala           | Lys | Glu | Phe | Arg | Ala | Ser | Leu | Tyr | Lys | Gly | Val | Asn | Ser | Asp | Val |  |  |     |
|               |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |  |  |     |
| Glu           | Val | Cys | Val | Gly | Asn | Gly | Asn | Phe | Thr | Tyr | Gln | Pro | Gln | Phe | Arg |  |  |     |
|               |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |  |  |     |
| Ser           | Asn | Ala | Glu | Phe | Asn | Cys | Asp | Gly | Asp | Phe | Asp | Asn | Glu | Thr | Val |  |  |     |
|               |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |     |
| Thr           | Phe | Arg | Leu | Trp | Asn | Leu | His | Val | Asn | His | Thr | Asp | Ile | Tyr | Phe |  |  |     |
|               |     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |  |  |     |

Cys Lys Ile Glu Phe Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Arg  
115 120 125

Ser Asn Gly Thr Ile Ile His Ile Lys Glu Lys His Leu Cys His Thr  
130 135 140

Gln Ser Ser Pro Lys Leu Phe Trp Ala Leu Val Val Val Ala Gly Val  
145 150 155 160

Leu Phe Cys Tyr Gly Leu Leu Val Thr Val Ala Leu Cys Val Ile Trp  
165 170 175

Thr Asn Ser Arg Arg Asn Arg Leu Leu Gln Val Thr Thr Met Asn Met  
180 185 190

Thr Pro Arg Arg Pro Gly Leu Thr Arg Lys Pro Tyr Gln Pro Tyr Ala  
195 200 205

Pro Ala Arg Asp Phe Ala Ala Tyr Arg Pro  
210 215

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<212> PRT  
<213> Homo sapiens

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Met Leu Arg Leu Leu Leu Ala Leu Asn Leu Phe Pro Ser Ile Gln Val  
1 5 10 15

Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr  
20 25 30

Asp Asn Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser  
35 40 45

Arg Glu Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu  
50 55 60

Val Cys Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser  
65 70 75 80

Lys Thr Gly Phe Asn Cys Asp Gly Lys Leu Gly Asn Glu Ser Val Thr  
85 90 95

Phe Tyr Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys  
100 105 110

Lys Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser  
115 120 125

Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro  
130 135 140

Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly  
145 150 155 160  
Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile  
165 170 175  
Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met  
180 185 190  
Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro  
195 200 205  
Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser  
210 215 220

<210> 20  
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Met Ala Cys Leu Gly Leu Arg Arg Tyr Lys Ala Gln Leu Gln Leu Pro  
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Ser Arg Thr Trp Pro Phe Val Ala Leu Leu Thr Leu Leu Phe Ile Pro  
20 25 30  
Val Phe Ser Glu Ala Ile Gln Val Thr Gln Pro Ser Val Val Leu Ala  
35 40 45  
Ser Ser His Gly Val Ala Ser Phe Pro Cys Glu Tyr Ser Pro Ser His  
50 55 60  
Asn Thr Asp Glu Val Arg Val Thr Val Leu Arg Gln Thr Asn Asp Gln  
65 70 75 80  
Met Thr Glu Val Cys Ala Thr Thr Phe Thr Glu Lys Asn Thr Val Gly  
85 90 95  
Phe Leu Asp Tyr Pro Phe Cys Ser Gly Thr Phe Asn Glu Ser Arg Val  
100 105 110  
Asn Leu Thr Ile Gln Gly Leu Arg Ala Val Asp Thr Gly Leu Tyr Leu  
115 120 125  
Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr Phe Val Gly Met Gly  
130 135 140  
Asn Gly Thr Gln Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser  
145 150 155 160  
Asp Phe Leu Leu Trp Ile Leu Val Ala Val Ser Leu Gly Leu Phe Phe



Arg Ser Pro Leu Thr Thr Gly Val Tyr Val Lys Met Pro Pro Thr Glu  
195 200 205

Pro Glu Cys Glu Lys Gln Phe Gln Pro Tyr Phe Ile Pro Ile Asn  
210 215 220

<210> 22

<211> 284

<212> PRT

<213> Caenorhabditis elegans

<400> 22

Met Asn Phe Ile Ser Ala Lys Leu Val Phe Val Pro Trp Leu Trp Asn  
1 5 10 15

Lys Met Ala Phe Ile Lys Arg Lys Thr Val Lys Phe Ser Val Asp Leu  
20 25 30

Gln Val Cys Gln Leu Ser Asp Val Pro Leu Val Asn Ala Thr Val Phe  
35 40 45

Gly Lys Met Arg Leu Leu Asp Gly Gly Ser Phe Glu Glu Ala Thr Glu  
50 55 60

Arg Val Glu Glu Gln Lys Gly Gly Lys Ser Tyr Tyr Lys Leu Gly Phe  
65 70 75 80

Val Asp Ile Asn Leu Ser Glu Tyr Ala Ala Ser Gly Val Glu Gly Ile  
85 90 95

Ser Arg Thr Tyr Leu Leu Asn Gly Tyr Thr Ser Asn Gln Arg Leu Asp  
100 105 110

Asn Ser Lys Val Cys Ile Lys Val Ala Met Thr His Gln Ser Ala Asp  
115 120 125

Pro Phe Phe Arg Val Pro Arg Leu Ser Thr Phe Gly Pro Arg Gln Asp  
130 135 140

Gly Ala Ile Asp Gln Asp Gly Phe Arg Ala Asp Asp Glu Thr Asp Ser  
145 150 155 160

Glu Glu Gly Thr Ser Ser His Pro Lys Leu Ser Asn Val Asp Val Leu  
165 170 175

Glu Ser Ser Ser Ala Ala Ser Asn Ser Gln Val Asp Glu Pro Val Val  
180 185 190

Glu Arg Arg Val Ile His Pro Pro Gln His Pro Thr Cys Gln Leu Arg  
195 200 205

Arg Phe Ser Gln Asp Arg Ser Ala Gln Lys Ile Gln His Ser Arg Phe  
210 215 220

Asp Ala Asp Asn Val Ile Asp Lys Ile Ile Ala Glu Cys Arg Ile Ser  
 225 230 235 240  
 Glu Asp Glu Val Glu Ser Asn Ser Gly Gly Leu Val Leu Glu Lys Phe  
 245 250 255  
 Leu Asp Lys His Gly Lys Pro Leu Val Asn Pro Arg Gln Pro Val Lys  
 260 265 270  
 Arg Thr Ser Tyr Val Ala Glu His Phe Asn Asp Ala  
 275 280

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 <212> DNA  
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<220>  
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 primer

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 aaccttctag tcctttgggc tgc 23

<210> 24  
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<220>  
 <223> Description of Artificial Sequence:  
 oligonucleotide primer

<400> 24  
 ggcccaggct acaggctg 18